DOCUMENT RESUME

ED 156 940 CG 012 529

AUTHOR Feindler, Eva L.; Elder, John P.
TITLE A Comparison of Response-Cost and DRO Procedures in the Reduction of Swearing Behavior of Institutionalized Adolescents.
PUB DATE [77]
NOTE 14p.

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS Adolescents; *Anti Social Behavior; Behavioral Science Research; *Behavior Change; *Change Strategies; *Contingency Management; Institutionalized Persons; *Negative Reinforcement; *Positive Reinforcement; Research Projects

ABSTRACT

Response-cost refers to a procedure whereby a positive reinforcer is lost or some penalty is invoked following a specific misbehavior. In an alternate procedure called Differential Reinforcement of Other Responses (DRO), a reinforcing stimulus is delivered when a particular response is not emitted for a specific interval of time. This study compares the effectiveness of these two procedures in reducing four types of inappropriate behaviors. Subjects were eight residents of a state hospital's adolescent unit. Results show DRO as significantly more effective than response-cost procedures in reducing swearing. Moreover, one of the response-cost procedures utilized resulted in slight increases in the frequencies of two of the other three targeted behaviors. Based on these results the authors recommend that treatment personnel explore the use of less aversive and possibly more effective positive contingencies. (Author)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED156940

A Comparison of Response-Cost and DRO Procedures in the Reduction of Swearing Behavior of Institutionalized Adolescents

Eva L. Feindler[1] and John P. Elder

West Virginia University

and

Camarillo- Neuropsychiatric Institute

UCLA School of Medicine

Running head: Response-cost and DRO in Reducing Swearing

Send proofs to: John P. Elder
Camarillo- NPI
Box A
Camarillo, CA 93010

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

E.L Feindler

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

CG 012 529

Abstract

Response-cost and DRO procedures have both been employed in reducing the frequency of antisocial behaviors. However, response-cost procedures have at times resulted in negative side effects, and clear comparisons between the two procedures lacking. Within a time-series reversal design, the present study compared the relative of DRO and two magnitudes of response-cost in reducing the swearing of institutionalized adolescents. Additionally, three other categories of disruptive behavior were treated by the two response-cost magnitudes. DRO was significantly more effective than either response-cost procedure in reducing swearing. The higher magnitude response-cost procedure resulted in slight increases in the frequencies of two of the other three behaviors. The search for and use of effective positive contingencies whenever is advocated.

Response-cost refers to a procedure whereby a positive reinforcer is lost or some penalty is invoked following a specific misbehavior. Response-cost procedures have been employed effectively in token programs to reduce innappropriate behaviors in a variety of settings (Kazdin, 1972). Phillips (1968) and his colleagues have used response-cost procedures within a point system to modify the aggressive and disruptive behaviors of delinquents in a home setting. Other token programs have incorporated response-cost procedures to reduce antisocial behaviors (Burchard and Barrera, 1972), episodes of noise and violence (Winkler, 1970), violation of ward rules (Liesbon, Cohen and Faillace, 1972) and other behaviors.

Several direct comparisons have been made between reward and cost procedures, yet results remain inconclusive. Kaufman and O'Leary (1972) found no differences between reward and cost conditions on classroom behaviors for adolescents within a psychiatric hospital. McLaughlin and Malaby (1972) found that withdrawing tokens for inapproppriate verbalizations was not as effective as delivering tokens for the absence of such verbalizations on the part of fifth and sixth graders. Iwata and Baily (1974) directly compared the efficacy of response-cost and token reinforcement programs in a special class. Results indicated that paying attention, adhering to rules, and arithmetic performance improved eqally accross both conditions. Another study compared different magnitudes of cost in reducing the occurence of swearing, fighting, and destroying property of institutionalized male delinquents (Burchard & Barrera, 1972). The loss of 30 tokens reduced undesirable behaviors below baseline levels, wheras the loss of 5 tokens did not.

Studies reporting equivocal results from response-cost procedures (Boren & Colman, 1972; McLaughlin & Malaby, 1972) employed systems in which reward and cost were contingent upon specified behaviors. In studies reporting no

differences between the two procedures (Kaufman & O'Leary, 1972; Iwata & Bailey, 1974), rewards were given non-contingently and then were withdrawn contingent upon inappropriate behaviors. A more aversive situation may be created when earned reinforcers are removed, while response-cost procedures may be less than adequate when used with aggressive or socially deficient clients.

Some negative side effects of the response-cost procedure have been reported. Meichenbaum, Bowers and Ross (1968) reported adverse verbal reactions and a reduction of appropriate academic behaviors following response-cost procedures in a classroom token economy for delinquent girls. The girls protested the use of fines and the reduction of the amount of money which could be earned. In a token program for institutionalized delinquent soldiers, imposing fines for absenteeism and rebellious behaviors (Boren & Colman, 1972). In elementary classrooms, token conditions were associated with an increase in the teachers rate of approval, whereas the response-cost condition was not (Iwata & Bailey, 1974). Similar to results reported in the animal literature (e.g. Keehn, 1976), response-cost procedures may actually result in the facilitation of aggression. Also, the possibility that a reliance upon response-cost procedures has less beneficial side effects upon staff behaviors than token reinforcement may be an important consideration.

An alternate procedure that does not evidence these potential side effects is differential reinforcement of other responses (DRO). In this procedure, a reinforcing stimulus is devilered when a particular response is not emitted for a specified interval of time (Repp & Deitz, 1974). DRO procedures have been moderately effective in reducing self-injurious behaviors of retarded adolescents (Corte, Wolfe & Locke, 1971), inappropriate verbalizations of elementary students (McLaughlin & Malaby, 1972), mouthing

of objects and hands (Foxx & Azrin, 1973) and aggressive behavior of retarded children (Repp & Deitz, 1974).

Procedural differences exist between studies employing response-cost and DRO methods, making clear comparisons and recommendations difficult. The present study compared response-cost and positive reinforcement of other behavior in the modification of swearing behavior of institutionalized adolescents involved in a token economy. Additionally, this study compared two different levels of magnitude of response-cost for several categories of undesirable behaviors: swearing, assaults, threatening and interruptions.

Method

Subjects

Subjects were eight residents of a state hospital's adolescent unit. The three females and five males ranged in age from 12 to 17 years with an average length of hospitalization of four months. The subjects were diagnosed as emotionally disturbed and/or ajusticated predelinquent.

Procedure

A modification of the Achievement Place model of treatment (Phillips, 1968) was implemented three months prior to this study (Elder, Plants, Welch & Feindler, 1977). Residents earned points for academic, mealtime, grooming, and room maintenance behaviors. Points were then exchanged for a variety of back-up reinforcers. Point fines were contingent upon four categories of disruptive behavior: foul language, threats (of aggression or assault directed to another person), assault (hitting, kicking, biting, ect.) and interruptions (including office interruptions or interruptions of conversation). Psychiatric aides and other staff responsible for operating the point system were not aware of the study's various phases, nor of its' general purpose.

Response-cost phase: The number of fine occurences for all categories of disruptive behavior were monitored on a daily basis duriug a three week "fines only" baseline.

Increased response-cost phase: Following baseline, limits were set on the number of fines allowed for individual residents. More than five fines across all categories per day resulted in losses of privileges for 24 hours. These privileges were outside passes, smoking, and evening snacks. This condition was in effect for three weeks.

DRO phase: During this phase, any resident who had no fines for the foul language category was eligible for the daily lottery drawing for 30 bonus points. This drawing took place during the daily Family Conference (Elder et. al., 1977) and was conducted by two ward psychological assistants. All other categories of fines remained in the Increased response-cost phase. This phase was in effect for one week.

Increased response-cost phase: This phase was reimplemented and remained in effect for the final week of the study, for all categories of disruptive behavior.

Results

Figur 1 presents the frequencies of swearing fines during all four phases. Durin the response-cost phase, the mean number of daily occurences of swearing

Inset Figure 1 about here

fines was 2.8 (as indicated by the solid horizontal line). The mean number of daily occurences increased to 3.9 during the first increased resonse-cost phase, and decreased to 1.0 during the DRO phase. Due to a record keeping error, daily data was available for only the first two days of the second increased response-cost phase. However, a record of the mean number of daily occurences of swearing fines during these seven days yeilded a mean of 7.2.

An overall time series analysis of variance and a Duncan's Multiple Range test showed that the DRO phase resulted in a significantly lower number of fines occurences than did the other phases ($df = 2.47$, $p < .05$).

Fine frequency for two of the three other categories of disruptive behavior showed slight increases from the response-cost to the incresed response-cost phase. Fines for assault averaged 1.8 per day during the response-cost phase and 2.2 during the increased response-cost phase. The mean number of daily fines for interruptions was 2.8 during the response-cost phase, while the mean number of fines for threats was 2.4 for both of the phases.

Discussion

The use of positive contingencies via a DRO procedure was significantly more effective in reducing the incidence of fined swearing behaviors than were response-cost procedures of two different magnitudes. Additionally, increased response-cost conditions were less effective in minimizing fines for three of the four classes of disruptive behavior than were response-costs of lower magnitude. This apparent facilitation of aggressive behavior through the increase of the aversive consequences magnitude is equivalent to other negative results found in the response-cost literature (e.g., Meichenbaum, Bowers & Ross, 1968; Boren & Colman, 1972) and is analogous to schedule-dependent aggression (Keehn, 1976). This finding contradicts those of Burchard and Barrera (1972).

One shortcoming of the present study lies in the relatively short duration of the DRO condition. However, the lack of variability in the DRO data and the rapid and marked increase in fined swearing behaviors following the termination of the DRO condition indicate that it was highly effective. The use of punishment and other aversive consequences may be necessary to control more dangerous classes of aggressive responses. However, the results of the

present study indicate that when feasible, treatment personnel should explore the use of less aversive and possibly more effective positive contingencies.

References

Boren, J.J. & Colman, A.D. Some experiments on reinforcement principles within a psychiatric ward for delinquent soldiers. Journal of Applied Behavior Analysis, 1970, 3, 29-37.

Burchard, J. & Barrera, F. An analysis of time-out and response-cost in a programmed enviornment. Journal of Applied Behavior Analysis, 1972, 5, 271-282.

Corte, H., Wolf, M. & Locke, B. A comparison of procedures for eliminating self-injurious behavior of retarded adolescents. Journal of Applied Behavior Analysis, 1971, 4, 201-213

Elder J., Plants D., Welch H.,& Feindler,E. An application of the Achievement Place model in a psychiatric setting. Paper presented at the 3rd Annual Convention of the Midwestern Association for Behavior Analysis, May, 1977.

Foxx, R. & Azrin, N. The elimination of autistic self-stimulatory behavior by overcorrection. Journal of Applied Behavior Analysis, 1973, 6, 1-14.

Iwata, B. & Baily, J. Reward versus cost token systems: An analysis of the effects on students and teachers. Journal of Applied Behavior Analysis, 1974, 7, 567-576.

Kendin, A.E. Response-cost: The removal of conditioned reinforcers for therapeutic change. Behavior Therapy, 1972, 3, 533-546.

Kaufman, K. & O'Leary, K. Reward, cost and self-evaluation procedures for disruptive adolescents in a psychiatric hospital school. Journal of Applied Behavior Analysis, 1972, 5, 293-309.

Keehn, J.D. Schedule-dependent aggression. In E. Ribes-Inesta & A. Bandura (Eds.): Analysis of Delinquency and Aggression. Hillside, New Jersey: Wiley & Sons, 1976.

Liesbon, I., Cohen,M. & Faillace, L. Group fines: Technique for behavioral control in a token economy. Psychological Reports, 1972, 30, 895-900.

McLaughlin, F. & Malaby, J. Reducing and measuring inappropriate verbalizations in a token classroom. Journal of Applied Behavior Analysis, 1972, 5, 329-333.

Meichenbaum, D., Bowers, K. & Ross, R. Modification of classroom behavior of institutionalized female adolescent offenders. Behavior Research and Therapy, 1968, 6, 343-353.

Phillips, E.L. Achievement Place: Token reinforcement procedures in a home-style rehabilitation setting for "pre-delinquent" boys. Journal of Applied Behavior Analysis, 1968, 1, 213-223.

Repp, A.C. & Dietz, S.M. Reducing aggressive and self-injurious behavior of institutionalized retarded children through reinforcement of other behavior. Journal of Applied Behavior Analysis, 1974, 7, 313-325.

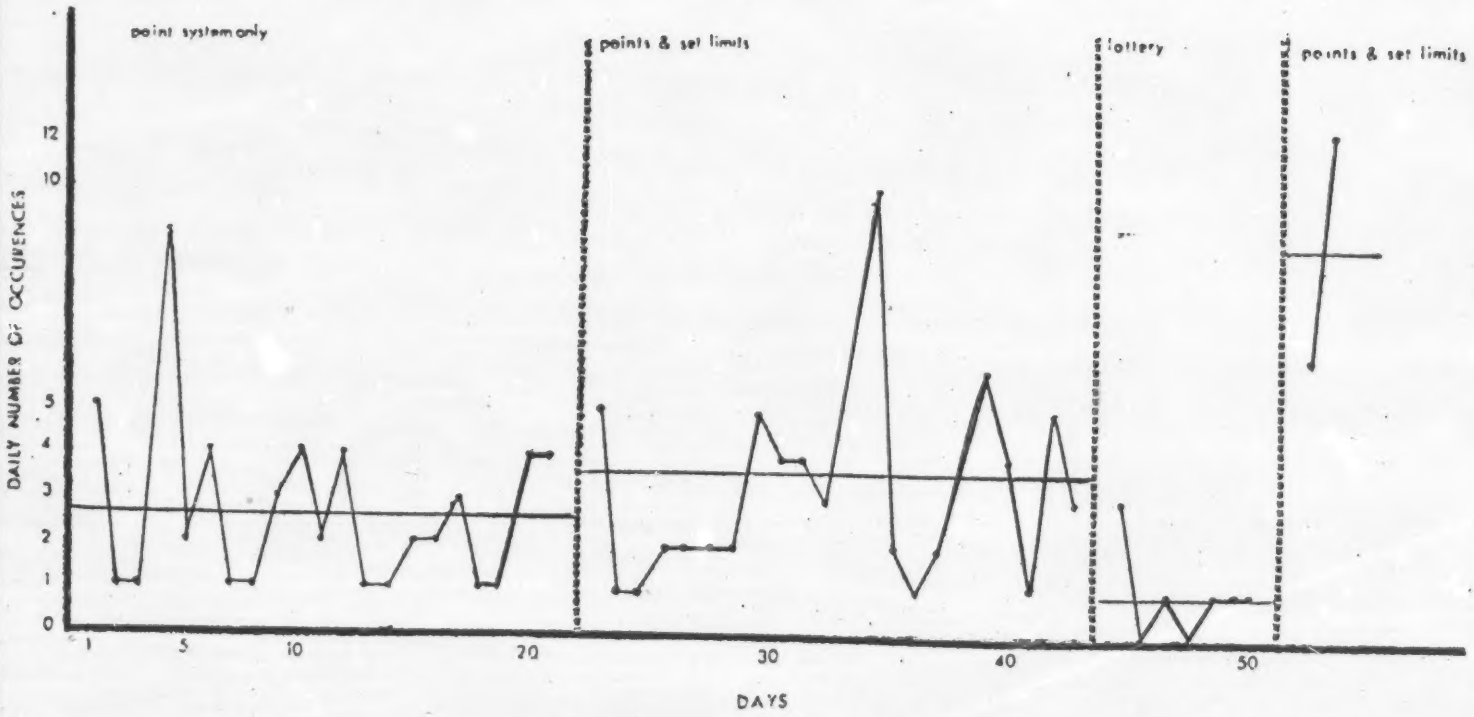
Winkler, R.C. Management of chronic psychiatric patients by a token reinforcement system. Journal of Applied Behavior Analysis, 1970, 3, 47-54.

Figure Caption

1. Total number of occurences of swearing per day and means per phrase during each treatment phrase.

Footnotes

[1]Requests for reprints should be mailed to the first author at Department of Psychology, West Virginia University, Morgantown, West Virginia, 26506.


point system only
points & set limits
lottery
points & set limits
DAILY NUMBER OF OCCURENCES
0
1
2
3
4
5
10
12
1
5
10
20
30
40
50
DAYS